

Because heat generating sources driving prime movers, solar cells, wind turbines and flywheel devices are well known, and because their illustration is not essential for a proper understanding of the claimed invention, their detailed structure need not be shown in the drawings, as allowed by 37 C.F.R. § 1.83(a). Accordingly, Applicants respectfully request withdrawal of the rejection of the drawings noted on page 2 of the Office Action.

II. REJECTIONS UNDER 35 U.S.C. § 112

On page 2 the Office Action rejects claims 1-13 under 35 U.S.C. § 112, first paragraph. On page 3 the Office Action elaborates the rejection with respect to claim 1, stating that "claim 1 discloses a self-contained, non-renewable power generation module, yet in the remarks filed on 3/17/02 [sic] the flywheel is disclosed to be used as a storage energy source when the power generation module does not provide sufficient power." The Office Action then asks a series of questions related to the function of the power generation and the flywheel.

Clearly, the Examiner is merely repeating a prior 35 U.S.C. § 112, first paragraph rejection of claims 1 – 13, and has apparently not considered any Applicants' prior responses to this rejection and similar rejections.

As Applicants' representative explained during a March 13, 2002 personal interview, and as explained in prior responses to Office Actions, the power generation module is self-contained in that it does not rely on any external source for generating electrical power. That is, the power generation module contains within its housing the components required to generate electrical power. Furthermore, the power generation module is non-renewable, in the sense that the power generation module is replaced, or in the case when the power generation module is a fuel cell, optionally refueled, after removing the power generation module from the device for which it is providing electrical power. This is in contrast to recharging a rechargeable battery. Also, as discussed during the personal interview, and is clearly explained in the specification, the flywheel performs functions similar to those of a storage battery in that the flywheel stores electrical power generated by the power generation module and may provide this electrical power at periods of time when the power generation module, for whatever reason, is incapable of providing power at the requisite level for the device to which the power generation module is coupled.

} A ✓
Hand
generator
inside?

Furthermore, as noted above, the use of the terms "self-contained" and "non-renewable" were agreed to at the March 13, 2002 personal interview to differentiate the claimed invention from other sources of electrical power, such as rechargeable storage

batteries. Clearly, the power generation module is not “a perpetual source of energy” as questioned in the Office Action on page 3.

Also on page 3, the Office Action questions how several claim means for producing electrical power, specifically the solar cell, wind turbine, and flywheel, are incorporated into the invention. The Office Action states that solar cells, wind turbines and flywheels are different types of sources of energy and would require a power supply to have modifications.

As noted above with respect to the objection to the drawings, use of solar cells, wind turbines, and flywheels are well known in the art and a detailed description of the structure of these devices, and a corresponding description of their incorporation into the power supply, is not necessary for the claimed invention. Applicants remind the Examiner that the claimed invention, particularly the invention recited in claim 1, is a wireless power supply having a housing with a form factor equal to that of a conventional wired power supply. The specific features of the solar cell, flywheel, and wind turbine are not recited in claim 1, but instead are recited in claims that depend from claim 1 or other independent claims. Furthermore, the flywheel is not recited as a device for generating electricity, but rather as a device for storing electricity, and is therefore not the “DC power generator” recited in claim 1.

On page 4, the Office Action asserts that a DC power generator (a DC power generator is recited in claim 1) functions differently from the disclosed sources of energy in claims 2-4 (fuel cell, heat generating source, and solar cells). The Office Action then asks if the cells and heat source are part of the DC power generator or if the cells and the heat source are the DC generator.

As clearly stated in the specification, the DC power generator can take one of many forms. In an exemplary embodiment, the DC power generator is a fuel cell. However, other devices can be used to generate DC power, including a heat source driving a prime mover, solar cells, and wind turbines. Thus, the fuel cell, heat generating source driving a prime mover, solar cells, and wind turbine are all examples, or embodiments, of a DC power generator. Apparently, the Examiner is taking a very narrow view of the definition of DC power generator as a rotating electrical device that produces DC power based on rotation of a coil in a magnetic field. While such a device may be required to be a component of some DC power generators, the term “DC power generator,” as used in claim 1 encompasses more than just the rotating DC power generator, and includes the prime mover, or driving device in the case of a heat

generating source with a prime mover. In the case of fuel cells or solar cells, the DC power generators are the fuel cells and solar cells themselves.

Applicants again remind the Examiner that Applicants' representative explained the features of the devices recited in claims 2-5 to the Examiner during the March 13, 2002 personal interview. Applicants assert that any reasonable review of the specification combined with knowledge of one of ordinary skill in the art would lead to the conclusion that the specification completely supports the subject matter recited in claims 1-13. Withdrawal of the rejection of claims 1-13 under 35 U.S.C. § 112, first paragraph, is therefore respectfully requested.

III. THE CLAIMS DEFINE PATENTABLE SUBJECT MATTER

A. Claims 1, 6, 7, 11, and 12

On page 5 the Office Action rejects claims 1, 6, 7, 11, and 12 under 35 U.S.C. § 103(a) over U.S. patent 6,296,065 B1 to Carrier (hereafter Carrier) in view of U.S. Patent 6,075,345 to Lee (hereafter Lee). This rejection is respectfully traversed.

The Office Action asserts that Carrier discloses "a wireless power supply 14 having a housing with a form factor equal to that of a wired power supply, wherein the power supply 14 are rechargeable batteries" The Office Action admits that Carrier does not teach a DC/AC converter, but asserts that DC/AC converters are well known in the art, and alternatively, that Lee discloses a DC/AC converter.

Carrier is directed to a power supply for a DC-powered portable tool 12, a specific embodiment of which is a reciprocating saw. The power supply comprises a wired power supply 16 and a cordless (wireless) power supply 14, wherein the cordless power supply 14 can be installed in place of the wired power supply 16. However, the wired power supply cannot, in any reasonable interpretation of its structure and operation, be considered a "conventional" power supply. One of ordinary skill in the art of the design, manufacture, and use of a portable tool knows that such a portable tool is "conventionally" powered by a small AC motor. Such a motor draws power from an external AC source, usually 115/230 VAC, which, through a magnetic field set up in the stator, causes the rotor to rotate, thus driving the tool (or in the case of a reciprocating saw, the rotary motion is converted, through a gear box, into a reciprocating motion). In contrast to this "conventional" wired power supply, Carrier discloses the wired power supply 16 to be an AC/DC converter, wherein 115 VAC power is converted to 24 VDC power. The 24 VDC power is then applied to a small DC motor, which in turn drives the

} ✓

tool. As explained above, Carrier's wired power supply is not "conventional" in any sense. ✓

Furthermore, Carrier's cordless power supply is a rechargeable battery, such as a 24 VDC nickel-cadmium battery. See column 4, lines 32 – 34. Thus, Carrier's cordless power supply is renewable (i.e., rechargeable). } ✓

Still further, Carrier's cordless power supply 14 has a housing that is "substantially similar" to that of the wired power supply 16. Nowhere does Carrier disclose or suggest that the housings are "equal." See column 5, lines 51 – 52. } ✓

Lee is directed to a battery power supply, and does nothing to cure the defects in Carrier.

In contrast to Carrier and Lee, claim 1 recites "A retrofittable, wireless power supply device, comprising: a housing having a form factor equal to that of a conventional wired power supply device; a self-contained, non-renewable power generation module within the housing" What is specifically different between Applicants' claim 1 and anything taught or suggested by Carrier and Lee, individually and in combination, is that the Applicants' claimed housing has a form factor equal to that of a conventional wired power supply, and that the wireless power supply includes a power generation module that is non-renewable.

The above underlined language from claim 1 clearly distinguishes claim 1 from the combination of Carrier and Lee. That is, Applicants' claimed wireless housing and wired housing have equal form factors. Next, Applicants' claimed wireless power supply replaces a conventional power supply. Finally, Applicants' claimed power generation module is non-renewable. ✓ not defined

Claim 6 is a means-plus function claim generally corresponding to apparatus claim 1. In particular, claim 6 recites means for housing a retrofittable power supply, the means for housing having a form factor equal to that of a wired power supply device used in a non-portable electronic device, and means for generating power, comprising self-contained, non-renewable means for generating DC power. Thus, claim 6 recites features that generally correspond to those of apparatus claim 1, but are written in means-plus function language. Therefore, for the same reasons as noted above with respect to claim 1, claim 6 is also patentable. However, claim 6 recites an additional limitation of the power supply used in a non-portable electronic device. The tool 12 disclosed in Carrier is clearly portable. Furthermore, the only motivation for using Carrier's power supply in a } ✓

tool is to reduce the tool's weight, thereby enhancing its portability. For this additional reason, claim 6 is allowable.

Claim 7, 11, and 12 depend from claim 6, and for this reason and the additional features they recite, claims 7, 11, and 12 are also patentable. Withdrawal of the rejection of claims 1, 6, 7, 11, and 12 under 35 U.S.C. § 103(a) is respectfully requested.

B. Claim 2

On page 6 the Office Action rejects claim 2 under 35 U.S.C. § 103(a) over Carrier and Lee in view of U.S. patent 5,654,113 to Vaidyanathan et al. (hereafter Vaidyanathan). This rejection is respectfully traversed.

Vaidyanathan is directed to a rechargeable electrochemical battery having a solid organic electrode and a thin film cathode and anode. This is clearly not a proton exchange module fuel cell as asserted in the Office Action.

Claim 2 recites the DC power generator comprising a proton exchange module fuel cell. As noted above, Vaidyanathan is directed to a rechargeable electrochemical battery, and not a proton exchange module fuel cell. Accordingly, Carrier, Lee, and Vaidyanathan do not disclose or suggest all the features recited in dependent claim 2. Therefore, claim 2 is patentable. In addition, as noted above, claim 1 is patentable. Claim 2 depends from claim 1, and for this reason, claim 2 is also patentable. Withdrawal of the rejection of claim 2 under 35 U.S.C. § 103(a) is respectfully requested.

C. Claims 3 and 8

On page 7 the Office Action rejects claims 3 and 8 under 35 U.S.C. § 103(a) over Carrier and Lee in view of U.S. patent 5,693,201 to Hsu et al. (hereafter Hsu). This rejection is respectfully traversed.

As noted above, claims 1 and 6 are patentable. Claim 3 depends from claim 1 and claim 8 depends from claim 6. For this reason and the additional features they recite, claims 3 and 8 are also patentable. Withdrawal of the rejection of claims 3 and 8 under 35 U.S.C. § 103(a) is respectfully requested.

D. Claims 4, 5, 9, 10, and 13

On page 8 the Office Action rejects claims 4, 5, 9, 10, and 13 under 35 U.S.C. § 103(a) over Carrier and Lee. This rejection is respectfully traversed.

As noted above, claims 1 and 6 are patentable. Claims 4 and 5 depend from claim 1 and claims 9, 10, and 13 depend from claim 6. For this reason and the additional features they recite, claims 4, 5, 9, 10, and 13 are also patentable. Withdrawal of the rejection of claims 4, 5, 9, 10, and 13 under 35 U.S.C. § 103(a) is respectfully requested.

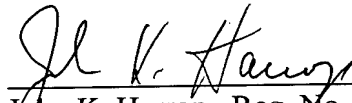
In view of the above amendments and remarks, Applicants respectfully assert that the application is in condition for allowance. Prompt reexamination and allowance of claims 1-13 is respectfully requested.

The Commissioner is hereby authorized to charge or credit any deficiencies in connection with this amendment to deposit account 08-2025.

Attached hereto are a marked-up version of the changes made to the claims by the current amendment. The attached pages are captioned "Version with markings to show changes made".

Date: December 12, 2002

Respectfully submitted,



John K. Harrop, Reg. No. 41,817

DORSEY & WHITNEY LLP

1001 Pennsylvania Avenue, N.W.

Suite 400 South

Washington, D.C. 20004

Tel. (202) 442-3000

Fax (202) 442-3199

Attachment

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims

1. (Twice Amended) A retrofittable, wireless power supply device, comprising:
 - a housing having a form factor equal to that of a conventional wired power supply device;
 - a self-contained, non-renewable power generation module within the housing, the power generation module comprising:
 - a DC power generator, the DC power generator capable of generating DC power for use in an electronic device, and
 - a DC/AC converter that generates AC output power using the generated DC power; and
 - one or more AC power output connections, connections, wherein the retrofittable power supply device replaces the wired power supply device.